AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1.   (Currently amended) A three-dimensional object manipulating apparatus, comprising:

a display means for displaying a three-dimensional object on [[the]] a screen of a display unit;

a dial-operated input device including a dial which can be pushed in and rotated;

a rotation-axis setting means for setting an axis of rotation for the three-dimensional object on the basis of a push-in made of a by pushing in the dial, which can be pushed in and rotated, of a dial-operated input device;

a detection means for detecting [[the]] a direction and an angle of [[a]] rotation [[made]] of the dial of the dial-operated input device, the dial being movable between a first position and a second position, the first position locking the rotation of the dial and the second position unlocking the rotation of the dial; and

an object rotating means for rotating the three-dimensional object [[being]] displayed on the screen of the display unit about the axis of rotation set by the rotation-axis setting means based on the basis of the direction and the angle of rotation[[,]] of the dial detected by the detection means, of the dial of the dial-operated input device.

2.   (Currently amended) A three-dimensional object manipulating apparatus, comprising:

a display means for displaying a three-dimensional object on [[the]] a screen of a display unit;

a dial-operated input device including a dial which can be pushed in and rotated;

a moving-axis setting means for setting an axis of movement for the three-dimensional object on the basis of a push-in made of a by pushing in the dial, which can be pushed in and rotated, of a dial-operated input device;

a detection means for detecting [[the]] a direction and an angle of [[a]] rotation [[made]] of the dial of the dial-operated input device, the dial being movable between a first position and a second position, the first position locking the rotation of the dial and the second position unlocking the rotation of the dial; and

an object moving means for moving the three-dimensional object [[being]] displayed on the screen of the display unit along the axis of movement set by the moving-axis setting means based on the basis of the direction and the angle of rotation[[,]] of the dial detected by the detection means, of the dial of the dial-operated input device.

3.   (Currently amended) A three-dimensional object manipulating apparatus, comprising:

a display means for displaying a three-dimensional object on [[the]] a screen of a display unit;

a dial-operated input device including a dial which can be pushed in and rotated;

a detection means for detecting [[the]] a direction and an angle of [[a]] rotation [[made]] of [[a]] the dial ~~of a dial-operated input device~~, the dial being movable between a first position and a second position, the first position locking the rotation of the dial and the second position unlocking the rotation of the dial; and

an object scale-up/scale-down means for scaling up or scaling down the three-dimensional object [[being]] displayed on the screen of the display unit based on ~~the basis of~~ the direction and the angle of rotation[[,]] of the dial detected by the detection means~~, of the dial of the dial-operated input device~~.

4.   (Currently amended) The apparatus as set forth in claim 1, wherein[[:]] the detection means ~~further has a function of detecting~~ detects a speed at which the dial of the dial-operated input device has been rotated[[;]], and

wherein the object rotating means rotates the three-dimensional object at [[a]] the speed corresponding to the speed of rotation[[,]] of the dial detected by the detection means~~, of the dial-operated input device~~.

5.   (Currently amended) The apparatus as set forth in claim 2, wherein[[:]] the detection means ~~further has a function of detecting~~ detects a speed at which the dial of the dial-operated input device has been rotated[[;]], and

wherein the object moving means moves the three-dimensional object at [[a]] the speed corresponding to the speed of rotation[[,]] of the dial detected by the detection means~~, of the dial-operated input device~~.

6. (Currently amended) The apparatus as set forth in claim 3, wherein[[:]] the detection means ~~further has a function of detecting~~ detects a speed at which the dial of the dial-operated input device has been rotated[[;]], and

wherein the object scale-up/scale-down means scales up or scales down the three-dimensional object [[being]] displayed on the screen of the display unit at a scale-varying rate corresponding to the speed of rotation[[,]] of the dial detected by the detection means~~, of the dial-operated input device~~.

7. (Currently amended) A three-dimensional object manipulating method ~~in which there are used~~ including a system comprising a display unit, a data processor, and a ~~dial-controller~~ dial-operated input device having a dial which can be pushed in and rotated, the method comprising the steps of:

displaying~~, under control of the data processor,~~ a three-dimensional object on [[the]] a screen of the display unit;

setting~~, under control of the data processor,~~ an axis of rotation for the three-dimensional object ~~on the basis of a push-in made of the~~ by pushing in the dial of the dial-operated input device~~, and then detecting the direction and angle of a rotation made of the dial of the dial-operated input device~~; [[and]]

detecting a direction and an angle of rotation of the dial, the dial being movable between a first position and a second position, the first position locking the rotation of the dial and the second position unlocking the rotation of the dial; and

rotating, ~~under control of the data processor,~~ the three-dimensional object about

the set axis of rotation <u>based</u> on ~~the basis of~~ the detected direction and angle of [[the]]

rotation of the dial ~~of the dial-operated input device~~.

8.   (Currently amended) A three-dimensional object manipulating method ~~in~~

~~which there are used~~ <u>including a system comprising</u> a display unit, <u>a</u> data processor<u>,</u>

and a ~~dial-controller~~ <u>dial-operated</u> input device having a dial which can be pushed in

and rotated, the method comprising the steps of:

displaying, ~~under control of the data processor,~~ a three-dimensional object on

[[the]] <u>a</u> screen of the display unit;

setting, ~~under control of the data processor,~~ an axis of movement for the three-

dimensional object ~~on the basis of a push-in made of the~~ <u>by pushing in the</u> dial of the

dial-operated input device~~, and then detecting the direction and angle of a rotation made~~

~~of the dial of the dial-operated input device~~; [[and]]

<u>detecting a direction and an angle of rotation of the dial, the dial being movable</u>

<u>between a first position and a second position, the first position locking the rotation of</u>

<u>the dial and the second position unlocking the rotation of the dial; and</u>

moving, ~~under control of the data processor,~~ the three-dimensional object along

the set axis of movement <u>based</u> on ~~the basis of~~ the detected direction and angle of

[[the]] rotation of the dial ~~of the dial-operated input device~~.

9.   (Currently amended) A three-dimensional object manipulating method ~~in which there are used~~ including a system comprising a display unit, a data processor, and a ~~dial-controller~~ dial-operated input device having a dial which can be pushed in and rotated, the method comprising the steps of:

displaying~~, under control of the data processor,~~ a three-dimensional object on [[the]] a screen of the display unit;

detecting~~, under control of the data processor, the~~ a direction and an angle of [[a]] rotation [[made]] of the dial of the dial-operated input device, the dial being movable between a first position and a second position, the first position locking the rotation of the dial and the second position unlocking the rotation of the dial; and

scaling up or scaling down the three-dimensional object [[being]] displayed on the screen of the display unit based on ~~the basis of~~ the detected direction and angle of [[the]] rotation of the dial ~~of the dial-operated input device~~.

10.   (Currently amended) The method as set forth in claim 7, ~~wherein the data processor detects~~ further comprising:

detecting a speed at which the dial of the dial-operated input device has been rotated[[,]]; and

~~rotates~~ rotating the three-dimensional object at [[a]] the speed corresponding to the speed of [[the]] rotation ~~of rotation~~ of the ~~dial-operated input device~~ dial.

11.   (Currently amended) The method as set forth in claim 8, ~~wherein the data processor detects~~ further comprising:

detecting a speed at which the dial of the dial-operated input device has been rotated[[,]]; and

[[moves]] moving the three-dimensional object [[being]] displayed on the screen of the display unit at a speed corresponding to the detected speed of rotation of the dial ~~of the dial-operated input device~~.

12.   (Currently amended) The method as set forth in claim 9, ~~wherein the data processor detects~~ further comprising:

detecting a speed at which the dial of the dial-operated input device has been rotated[[,]]; and

~~scales~~ scaling up or scaling down the three-dimensional object [[being]] displayed on the screen of the display unit at a scale-varying rate corresponding to the speed of rotation of the dial ~~of the dial-operated input device~~.

13-15. (Canceled)

16.   (New) A computer readable medium having a program for causing a system to execute a three-dimensional object manipulating method, the system comprising a display unit, a data processor, and a dial-operated input device having a dial which can be pushed in and rotated, the method comprising the steps of:

displaying a three-dimensional object on a screen of the display unit;

setting an axis of rotation for the three-dimensional object by pushing in the dial of the dial-operated input device;

detecting a direction and an angle of rotation of the dial, the dial being movable between a first position and a second position, the first position locking the rotation of the dial and the second position unlocking the rotation of the dial; and

rotating the three-dimensional object about the set axis of rotation based on the detected direction and angle of rotation of the dial.

17.   (New) A computer readable medium having a program for causing a system to execute a three-dimensional object manipulating method, the system comprising a display unit, a data processor, and a dial-operated input device having a dial which can be pushed in and rotated, the method comprising the steps of:

displaying a three-dimensional object on a screen of the display unit;

setting an axis of movement for the three-dimensional object by pushing in the dial of the dial-operated input device;

detecting a direction and an angle of rotation of the dial, the dial being movable between a first position and a second position, the first position locking the rotation of the dial and the second position unlocking the rotation of the dial; and

moving the three-dimensional object along the set axis of movement based on the detected direction and angle of rotation of the dial.

18.   (New) A computer readable medium having a program for causing a

system to execute a three-dimensional object manipulating method, the system

comprising a display unit, a data processor, and a dial-operated input device having a

dial which can be pushed in and rotated, the method comprising the steps of:

displaying a three-dimensional object on a screen of the display unit;

detecting a direction and an angle of rotation of the dial of the dial-operated input

device, the dial being movable between a first position and a second position, the first

position locking the rotation of the dial and the second position unlocking the rotation of

the dial; and

scaling up or scaling down the three-dimensional object displayed on the screen

of the display unit based on the detected direction and angle of rotation of the dial.